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WHEN PLACING ORDER FOR PARTS,
PLEASE USE SEPARATE PARTS LIST.

I. SPECIFICATIONS

An asterisk next to a figure indicates the minimum guaranteed performance.

MODEL AA-5800

MUSIC POWER OUTPUT	160 W/4 Ω (80 W/80 W), 120 W/8 Ω (60 W/60 W)
RATED POWER OUTPUT	120 W/4 Ω (60 W/60 W), 90 W/8 Ω (45 W/45 W) 0.3% I.H.F
REC OUTPUT	PIN : 150 mV DIN : 25 mV
INPUT SENSITIVITY	AUX : 150 mV PHONO 1, PHONO 2 : 3 mV TUNER : 150 mV TAPE 1, TAPE 2 : 185 mV MIC : 1.2 mV
HARMONIC DISTORTION	Less than 0.1% at 30 W, 8 Ω
FREQUENCY RESPONSE	10 to 50,000 Hz -3 dB (*20 to 50,000 Hz -3 dB at 0 dBm, 8 Ω)
HUM AND NOISE	Less than -50 dBm Volume minimum
SIGNAL TO NOISE RATIO	AUX : More than 75 dB PHONO 1, PHONO 2 : More than 65 dB TUNER : More than 75 dB TAPE 1, TAPE 2 : More than 75 dB MIC : More than 53 dB
TONE CONTROLS	BASS : ± 10 dB at 100 Hz TREBLE : ± 10 dB at 10,000 Hz
LOUDNESS CONTROL	7 ± 1.5 dB at 100 Hz and 4 ± 1.5 dB at 10 kHz (-2 dBm output)
FILTERS	LOW CUT FILTER : -12 dB at 50 Hz HIGH CUT FILTER : -7 dB at 10 kHz
POWER BAND WIDTH	20 to 25,000 Hz at 22.5 W, 8 Ω , 0.3% I.H.F
TRANSISTORS	2SA 545 (L) (M) ... 1 2SC 853 (L) (M) ... 2 2SA 606 (L) (M) ... 2 2SC 900 (E) (F) ... 6 2SA 640 (E) (F) ... 6 2SC 959 (L) (M) ... 6 2SA 641 (L) (M) (N) ... 1 2SC 1222 (E) (F) ... 14 2SA 649 (L) (H) ... 2 2SD 218 (L) (M) ... 2
IC	LD-3120 ... 2
DIODES	IN34A ... 5 10D1 ... 4 5B4 ... 1
VARISTOR	STV-3 ... 2
SCR	1RC-5 ... 3
POWER SUPPLY	100 to 240 V AC 50/60 Hz (U.S.A 117 V AC 60 Hz as per U/L)
POWER CONSUMPTION	300 W
DIMENSIONS	432(W) \times 143(H) \times 330(D) mm (17.2" \times 5.7" \times 13.2")
WEIGHT	11.5 kg (25.3 lbs)
REMARKS	Specifications subject to change without notice.

An asterisk next to a figure indicates the minimum guaranteed performance.

MODEL AA-5500

MUSIC POWER OUTPUT	120 W/4 Ω (60 W/60 W), 80 W/8 Ω (40 W/40 W)
RATED POWER OUTPUT	90 W/4 Ω (45 W/45 W), 60 W/8 Ω (30 W/30 W) 0.8% I.H.F
REC OUTPUT	PIN : 150 mV DIN : 25 mV
INPUT SENSITIVITY	AUX : 150 mV TUNER : 150 mV PHONO 1, PHONO 2 : 3 mV TAPE 1, TAPE 2 : 150 mV MIC : 1 mV (*1.2 mV)
HARMONIC DISTORTION	Less than 0.1% at 10 W, 8 Ω
FREQUENCY RESPONSE	20 to 50,000 Hz -3 dB (*20 to 50,000 Hz -5 dB at 0 dBm, 8 Ω)
HUM AND NOISE	Less than -44 dBm, Volume minimum
SIGNAL TO NOISE RATIO	AUX : More than 70 dB TUNER : More than 70 dB PHONO 1, PHONO 2 : More than 65 dB (*58 dB) TAPE 1, TAPE 2 : More than 70 dB MIC : 51 dB
TONE CONTROLS	BASS : ± 10 dB at 100 Hz TREBLE : ± 10 dB at 10,000 Hz
LOUDNESS CONTROL	7 \pm 1.5 dB at 100 Hz and 4 \pm 1.5 dB at 10 kHz (-10 dBm output)
FILTERS	LOW CUT FILTER : -12.5 \pm 1.5 dB at 50 Hz HIGH CUT FILTER : -6 \pm 1.5 dB at 10 kHz
MUTE LEVEL	-20 \pm 1 dB
POWER BAND WIDTH	20 to 45,000 Hz (*20 to 30,000 Hz at 15 W, 8 Ω , 0.8% I.H.F)
TRANSISTORS	2SA 606 (L) (M) ... 2 2SC 900 (E) (F) (H) ... 6 2SC 959 (L) (M) ... 4 2SC 968 (3) (4) ... 1 2SD 188 (L) (M) ... 4
IC	LD-3120 ... 5
DIODES	S15-15 ... 8 IN34A ... 2
VARISTOR	STV-3 ... 2
SCR	IRC-5 ... 1
POWER SUPPLY	100 V to 240 V AC 50/60 Hz (U.S.A 117 V AC 60 Hz as per U/L)
POWER CONSUMPTION	300 W
DIMENSIONS	432(W) \times 143(H) \times 330(D) mm (17.2" \times 5.7" \times 13.2")
WEIGHT	9.9 kg (21.8 lbs)
REMARKS	Specifications subject to change without notice.

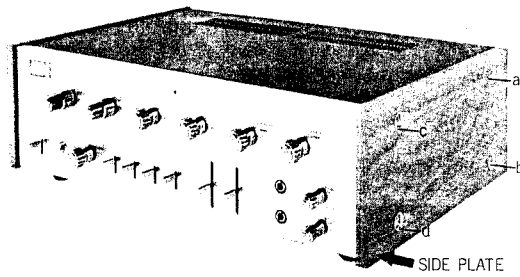
An asterisk next to a figure indicates the minimum guaranteed performance.

MODEL AA-5200

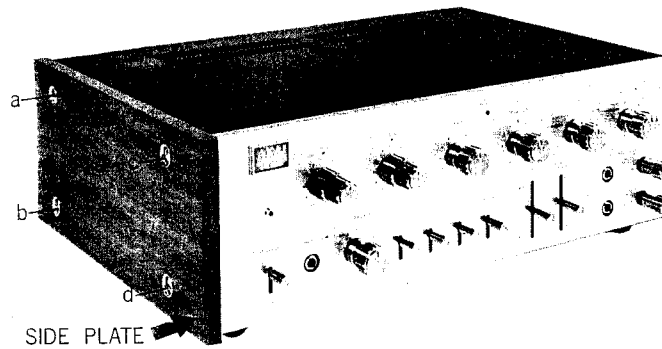
MUSIC POWER OUTPUT	80 W/4 Ω (40 W/40 W), 60 W/8 Ω (30 W/30 W)
RATED POWER OUTPUT	60 W/4 Ω (30 W/30 W), 40 W/8 Ω (20 W/20 W) 0.8% I.H.F
REC OUTPUT	PIN : 150 mV DIN : 25 mV
INPUT SENSITIVITY	AUX : 150 mV TUNER : 150 mV PHONO : 3 mV TAPE : 150 mV
HARMONIC DISTORTION	Less than 0.1% at 10 W; 8 Ω
FREQUENCY RESPONSE	20 to 50,000 Hz -3 dB (*20 to 50,000 Hz -5 dB at 0 dBm, 8 Ω)
HUM AND NOISE	Less than -50 dBm, Volume minimum
SIGNAL TO NOISE RATIO	AUX : More than 70 dB PHONO : More than 65 dB TUNER : More than 70 dB TAPE : More than 70 dB
TONE CONTROLS	BASS : ± 10 dB at 100 Hz TREBLE : ± 10 dB at 10,000 Hz
LOUDNESS CONTROL	7 ± 1.5 dB at 100 Hz and 4 ± 1.5 dB at 10 kHz (-10 dBm output)
FILTERS	LOW CUT FILTER : -12.5 ± 1.5 dB at 50 kHz HIGH CUT FILTER : -6 ± 1.5 dB at 10 kHz
POWER BAND WIDTH	20 to 45,000 Hz, (*20 to 30,000 Hz at 10W, 8 Ω , 0.8% I.H.F)
TRANSISTORS	2SA 545 (L) (M) ... 2 2SC 853 (L) (M) ... 4 2SC 900 (D) (F) (H) ... 4 2SC 968 (3) (4) ... 1 2SD 313 (E) (F) ... 4
IC	LD-3120 ... 4
DIODES	S15-15 ... 8
VARISTOR	STV-3 ... 2
POWER SUPPLY	100 V to 240 V AC 50/60 Hz (U.S.A 117 V AC 60 Hz as per U/L)
POWER CONSUMPTION	150 W
DIMENSIONS	432(W) \times 143(H) \times 330(D) mm (17.2" \times 5.7" \times 13.2")
WEIGHT	9 kg (19.8 lbs)
REMARKS	Specifications subject to change without notice.

II. DISMANTLING OF AMPLIFIERS

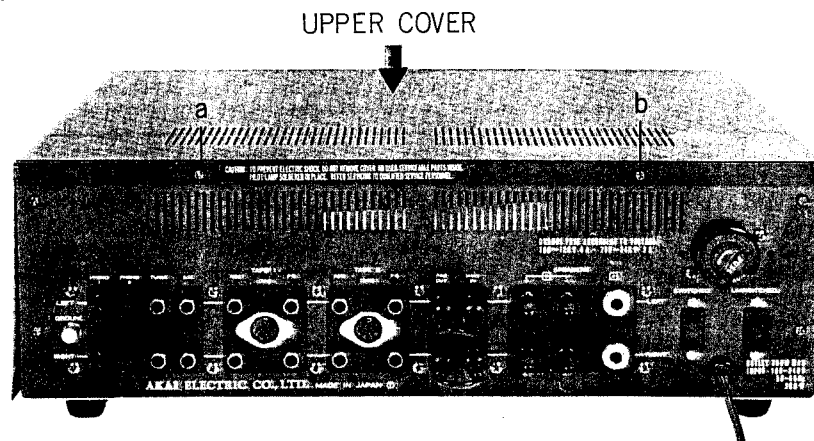
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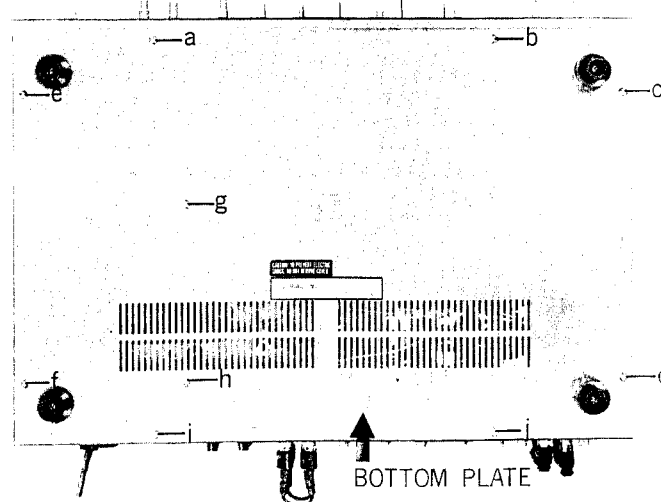
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3

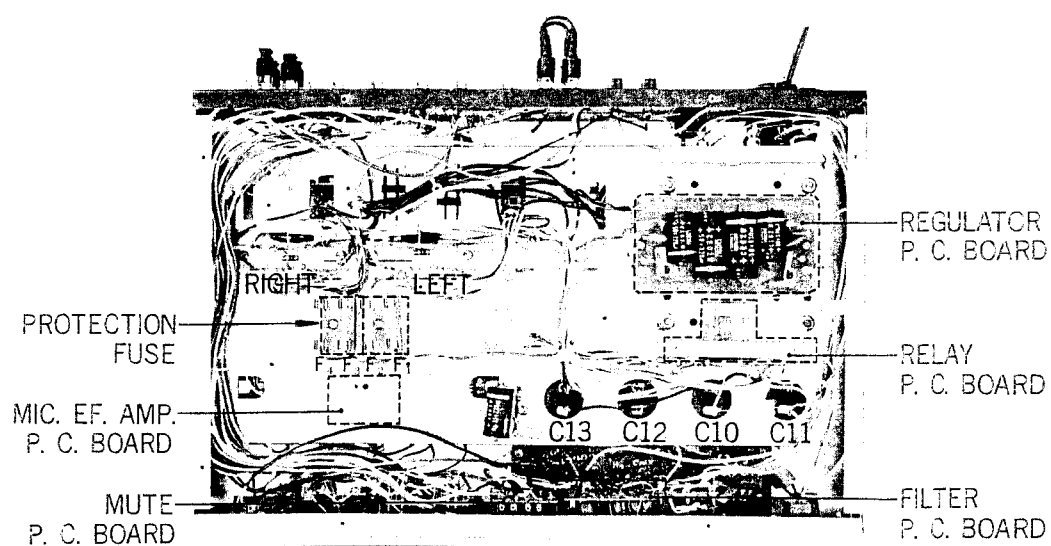
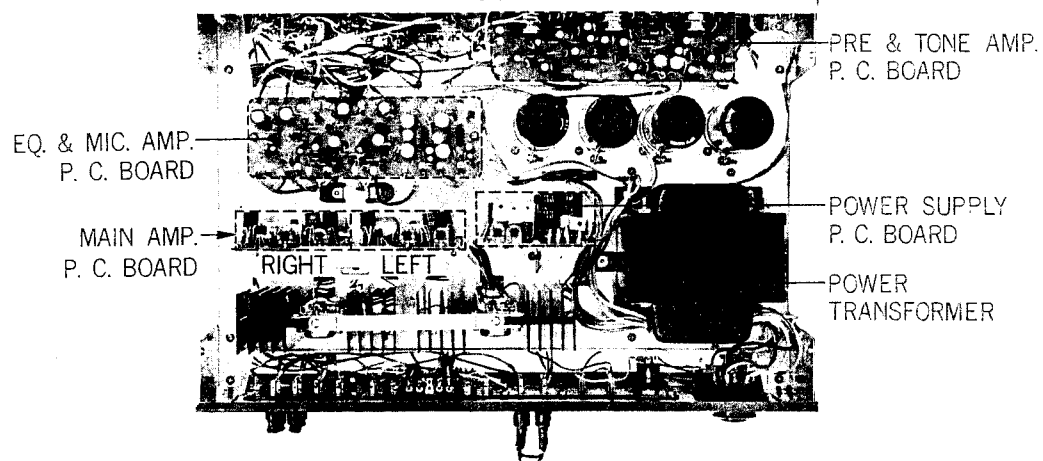


4

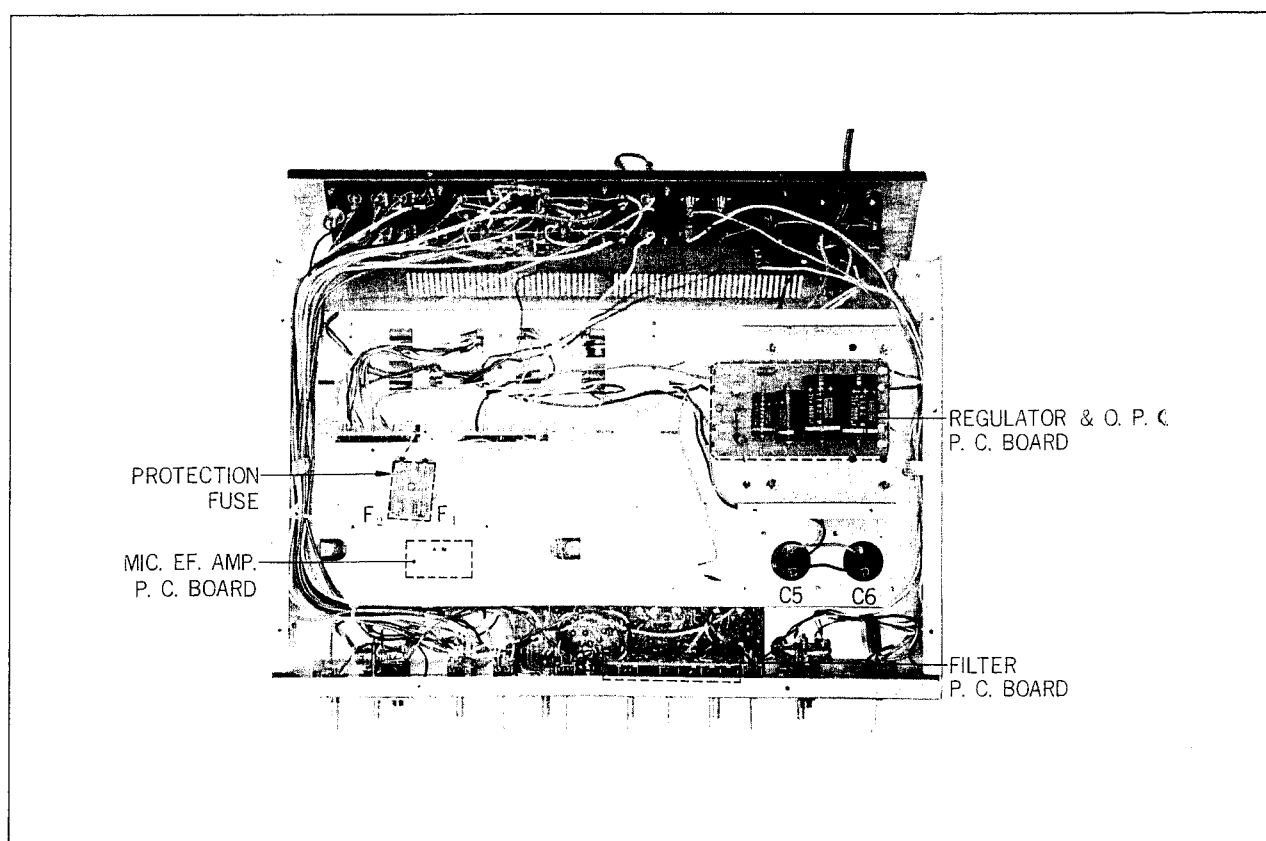
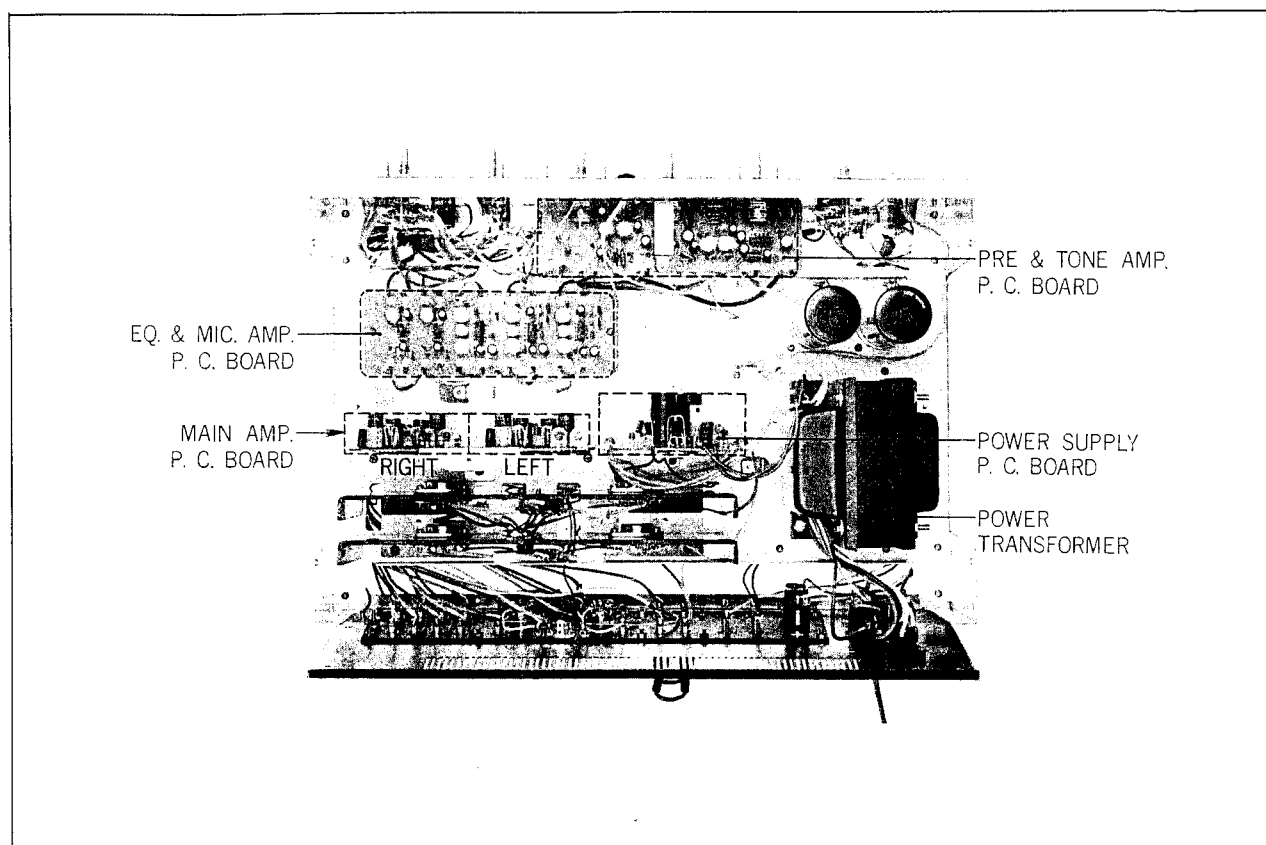


III. ARRANGEMENT OF MAIN PARTS

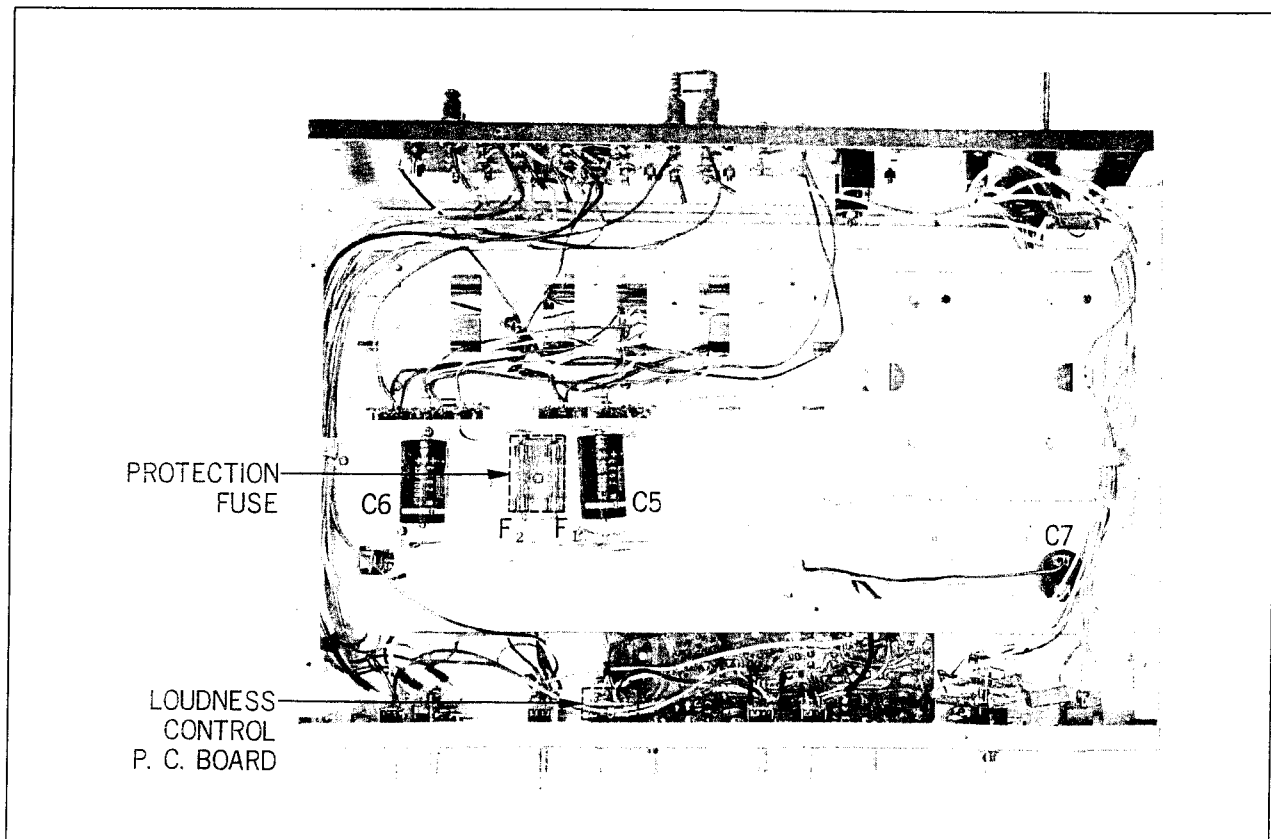
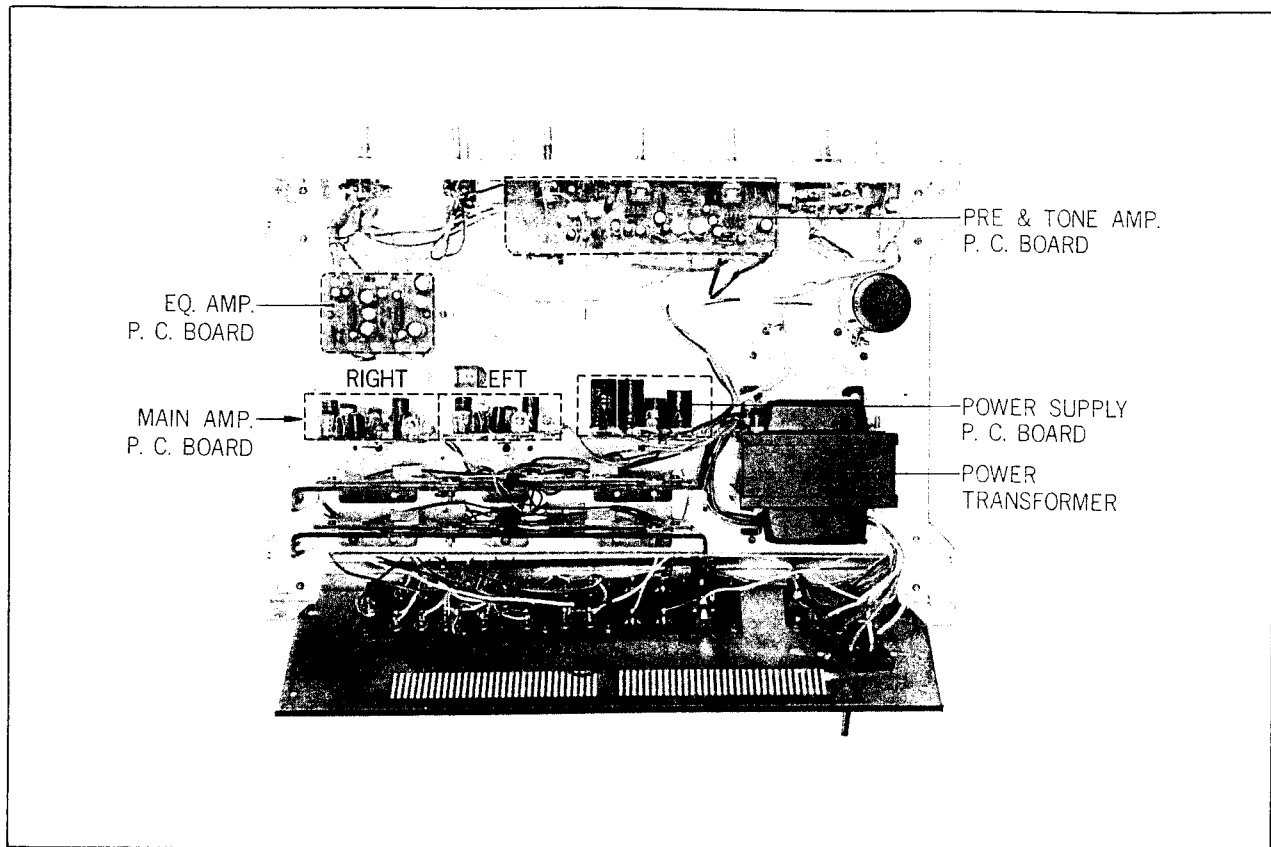
MODEL AA-5800



MODEL AA-5500



MODEL AA-5200



IV. MEASURING METHOD

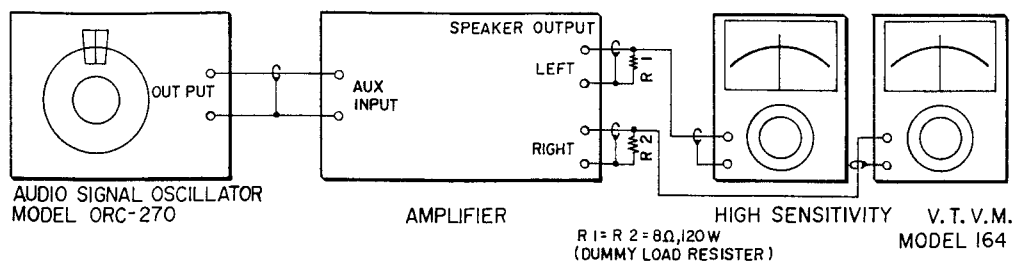


Fig. 1

1. FREQUENCY RESPONSE

Connect measuring instruments as shown in Fig. 1. Set Tone Controls to "FLAT" and supply a 1 kHz rated level signal to the AUX input terminal from the Audio Signal Oscillator. Then set Volume to obtain a "0" dB indication on both right and left High Sensitivity V.T.V.M. Under these conditions, take Audio Signal Oscillator readings in the variable range of 18 to 50,000 Hz and plot the levels on a graph. Let "0" dBm represent "0" dB and within a -3 dB range width from this point will represent Frequency Response.

2. POWER BAND WIDTH

Connect measuring instruments as shown in Fig. 1. Set Tone Controls to "FLAT" and supply a 1 kHz rated level signal to the AUX input terminal. Then increase the volume to obtain a 19 dBm indication on both right and left High Sensitivity V.T.V.M. Under these conditions, take Audio Signal Oscillator readings in the variable range of 18 to 50,000 Hz and plot the levels on a graph. Let 19 dBm output represent "0" VU, and within a -6 dB range width from this point will represent Power Band Width.

3. HUM AND NOISE

Connect measuring instruments as shown in Fig. 1. Turn volume to minimum. Take a High Sensitivity V.T.V.M. reading of the amplifier noise and hum element.

4. SIGNAL TO NOISE RATIO

Connect measuring instruments as shown in Fig. 1. Supply a 1 kHz rated input signal to the AUX input terminal from the Audio Signal Oscillator.

Turn volume to maximum and take a High Sensitivity V.T.V.M. reading of the output level. Let the output level at this time represent maximum output level.

Next, disconnect the lead wire from the Audio Signal Oscillator connected to the Aux input terminal and take a High Sensitivity V.T.V.M. reading of the noise element under a non-input condition. Let this output represent noise output level. Convert these two output levels into decibels and combine.

S/N Ratio formula :

$$\text{maximum output level } 20 \log 11 \text{ V} = 23 \text{ dBm}$$

$$\text{noise output level } 20 \log 2.5 \text{ mV} = -50 \text{ dBm}$$

$$\text{S/N ratio} = 23 \text{ dBm} + 50 \text{ dBm} = 73 \text{ dB}$$

V. MAIN AMPLIFIER ADJUSTMENTS

1. IDLING CURRENT ADJUSTMENT

(See Fig. 2)

Turn volume to minimum. Remove protector fuse from fuse holder and connect an Ammeter to the fuse terminals (match + and -). Adjust semi-fixed Resistor VR-2 to obtain an Ammeter indication according to specified value.

	AA-5200	AA-5500	AA-5800
Idling Current	35 mA	40 mA	40 mA
Protector Fuse	2A	4A	5A

Fig. 2

2. OUTPUT SIGNAL WAVEFORM ADJUSTMENT (See Figs. 3 and 4)

1) A-5200, AA-5500

After Idling Current Adjustment has been completed to specifications, replace protector fuse (See Fig. 2 for correct value), and connect measuring instruments as shown in Fig. 3.

Turn volume to maximum and at the point when the amplifier output waveform becomes slightly distorted, supply input voltage to the AUX terminal from the Audio Signal Oscillator. Then adjust semi-fixed Resistor VR-1 so that the clipping position of the upper and lower parts of the waveform on the oscilloscope are equal.

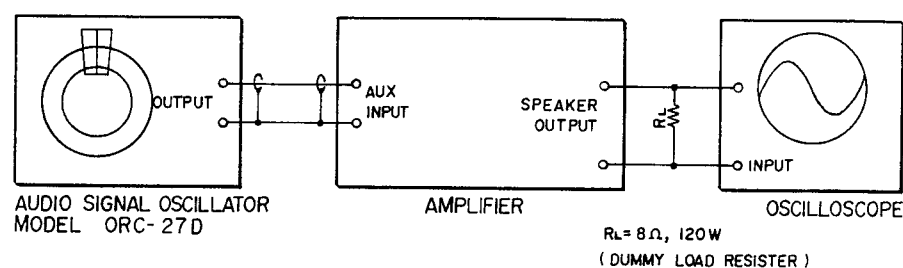


Fig. 3

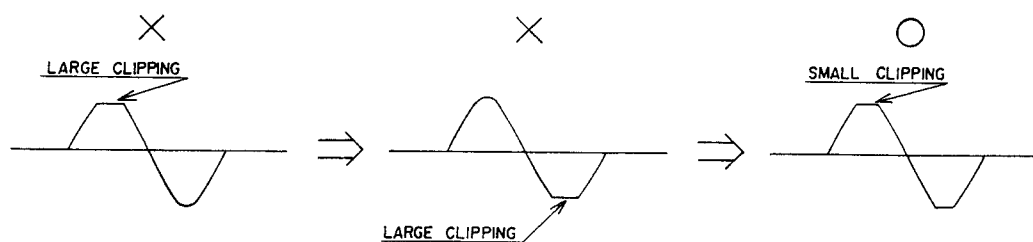


Fig. 4

Waveforms when the output waveform adjustment semi-fixed resistor is rotated.

3. ZERO ELECTRICAL POTENTIAL ADJUSTMENT (AA-5800, See Fig. 5)

Connect a V.T.V.M. (Model 107A) to terminal ⑦ of main amplifier card and to chassis as shown in the figure and adjust VR-1 ($300\ \Omega$ B) to obtain a "0" V.T.V.M. indication.

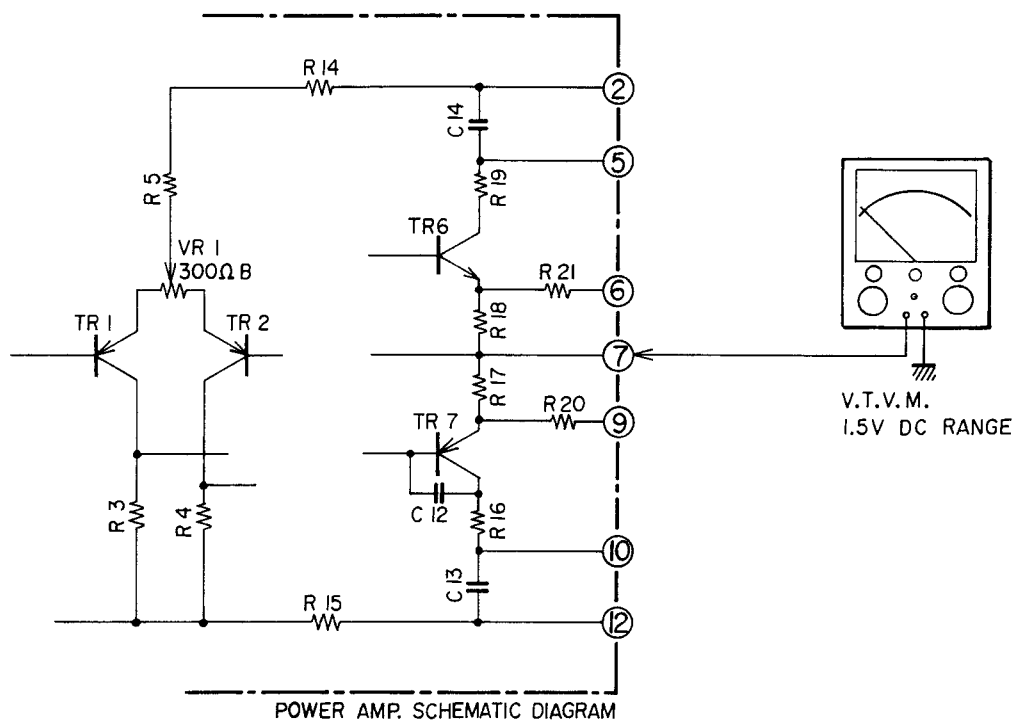


Fig. 5

VI. E.P.C. (ELECTRIC PROTECTION CIRCUIT) ADJUSTMENT

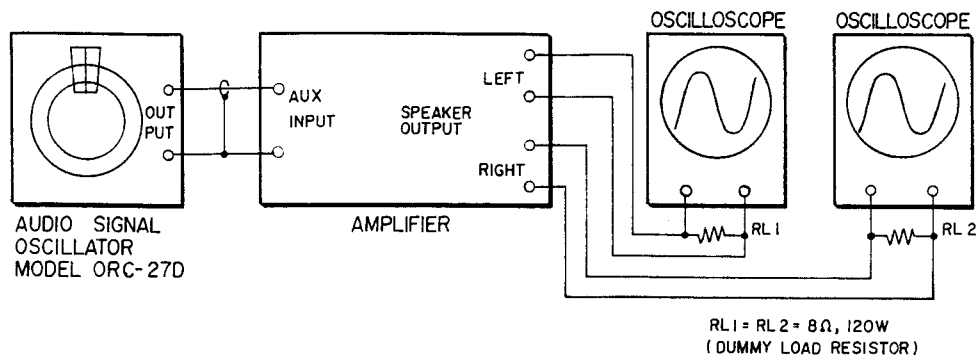


Fig. 6

1. Set amplifier Mode Switch to "STEREO", Tone Controls to "FLAT", and Balance Control to center position.
Supply rated input to AUX input, and set volume to obtain a +5 dBm speaker output on Model AA-5500 (+15 dB on Model AA-5800).
2. Turn E.P.C. Adjustment Semi-Fixed Resistor VR-1, VR-2 fully counter-clockwise (when facing machine and observing VR-1, VR-2 from the top of the set).
3. Short either the right or left channel speaker output and turn Semi-Fixed Resistor clockwise to the point at which the waveform on the oscilloscope is erased, stopping as soon as the output waveform is erased.

Caution :

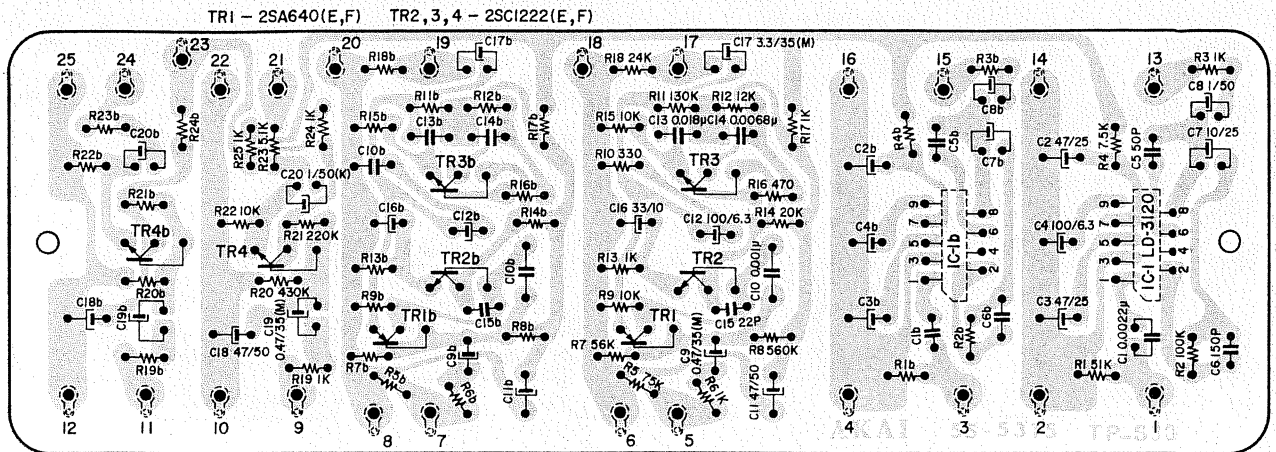
Model AA-5800 is equipped with an E.P.C. Adjustment Semi-Fixed Resistor for each channel (VR-1, left channel; VR-2, right channel).

4. As soon as the Portector Lamp lights, quickly turn off the Power Switch.
5. Next, decrease the dummy load resistance to 4 Ω and confirm that E.P.C. does not operate when the volume is turned to maximum.

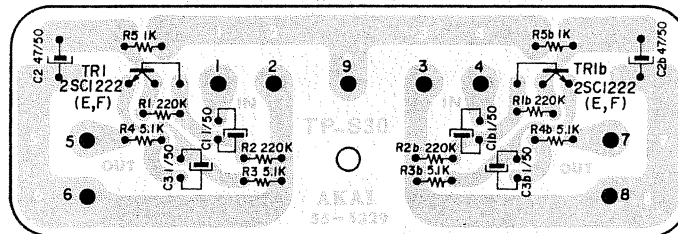
VII. COMPOSITE VIEWS OF COMPONENTS

MODEL AA-5800

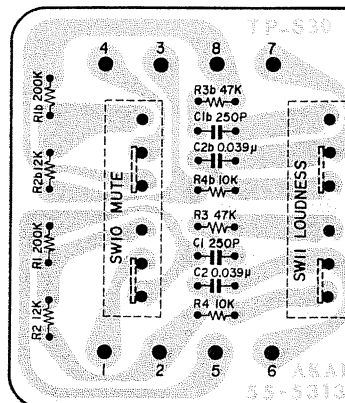
EQUALIZER MIC. AMP. P.C. BOARD (55-5315)



MIC. E-F. AMP. P.C. BOARD (55-5329)

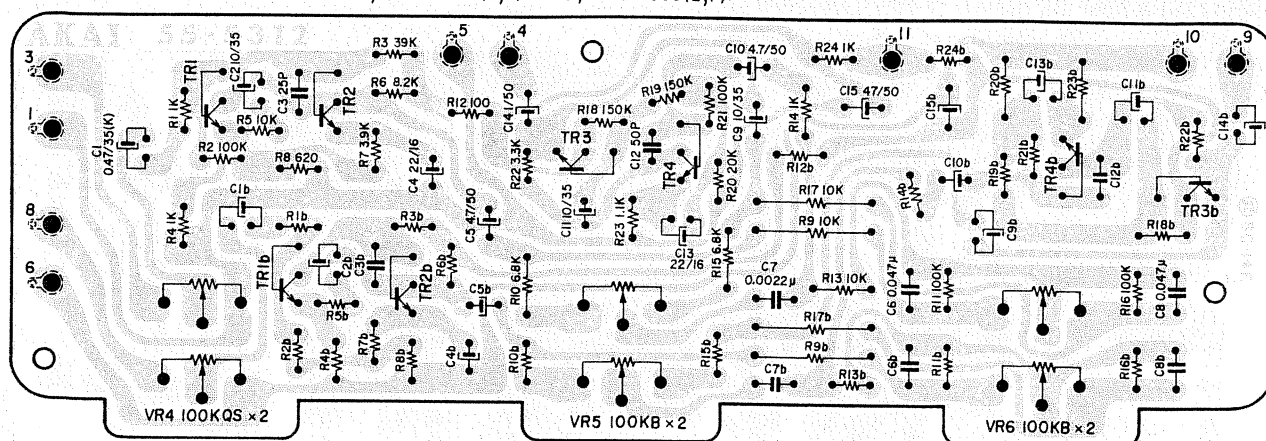


MUTE P.C. BOARD (55-5313)

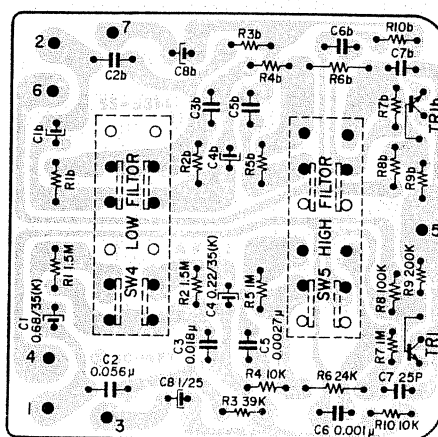


PRE TONE AMP. P.C. BOARD (55-5312)

TR1,2 - 2SC1222(E,F) TR3,4 - 2SC900(E,F)

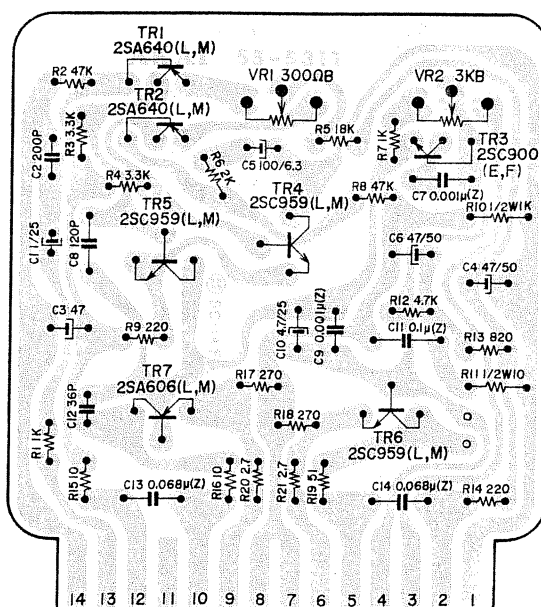


FILTER P.C. BOARD (55-5314)

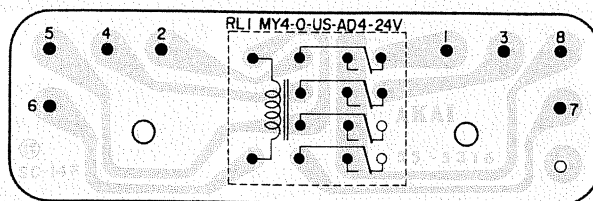


TR1 -- 2SC1222 (E,F)

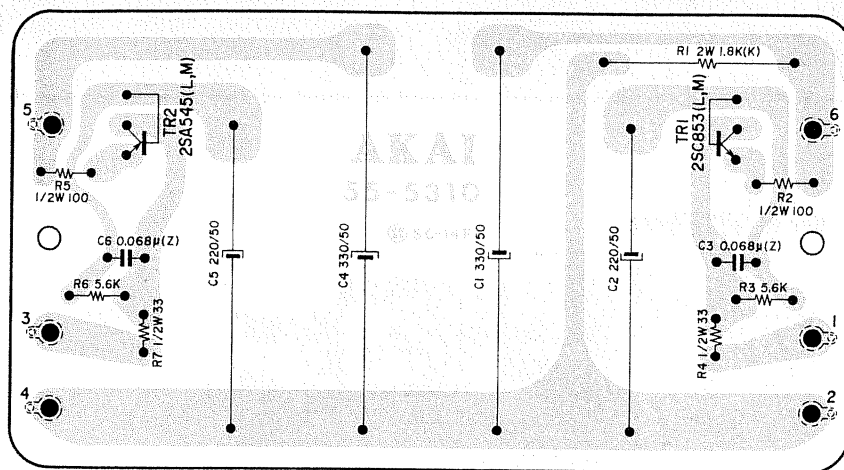
MAIN AMP. P.C. BOARD (55-5311)



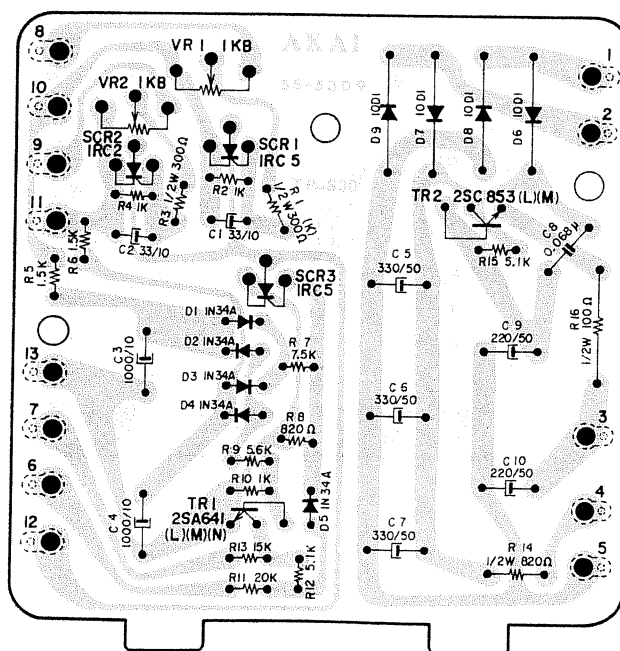
RELAY P.C. BOARD (55-5316)



REGULATOR P.C. BOARD (55-5310)

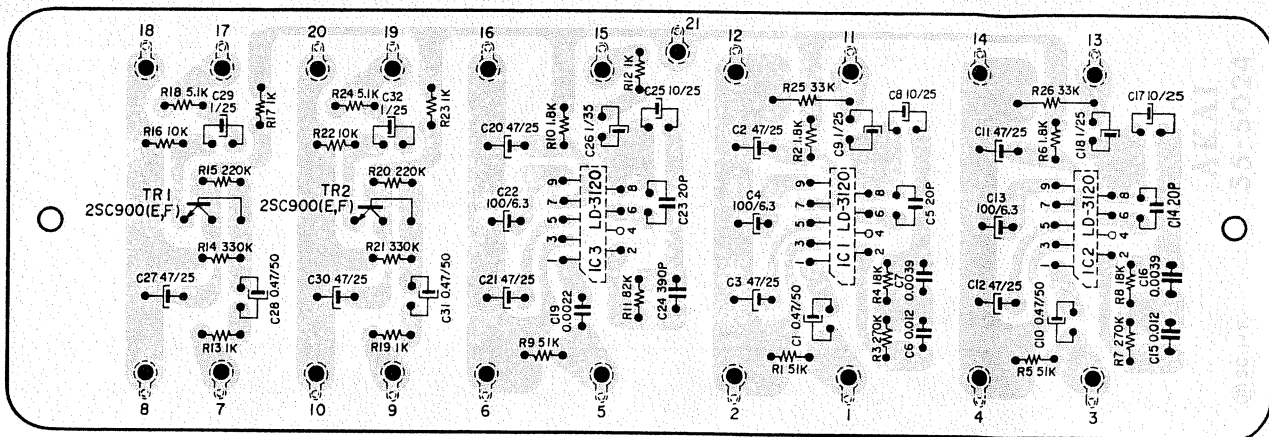


POWER SUPPLY P.C. BOARD (55-5309)

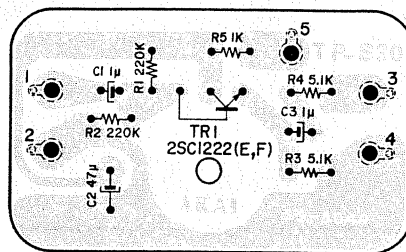


MODEL AA-5500

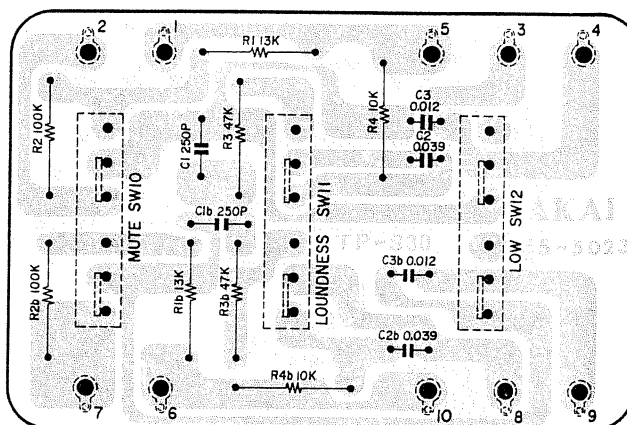
EQUALIZER & MIC. AMP. P.C. BOARD (55-5024)



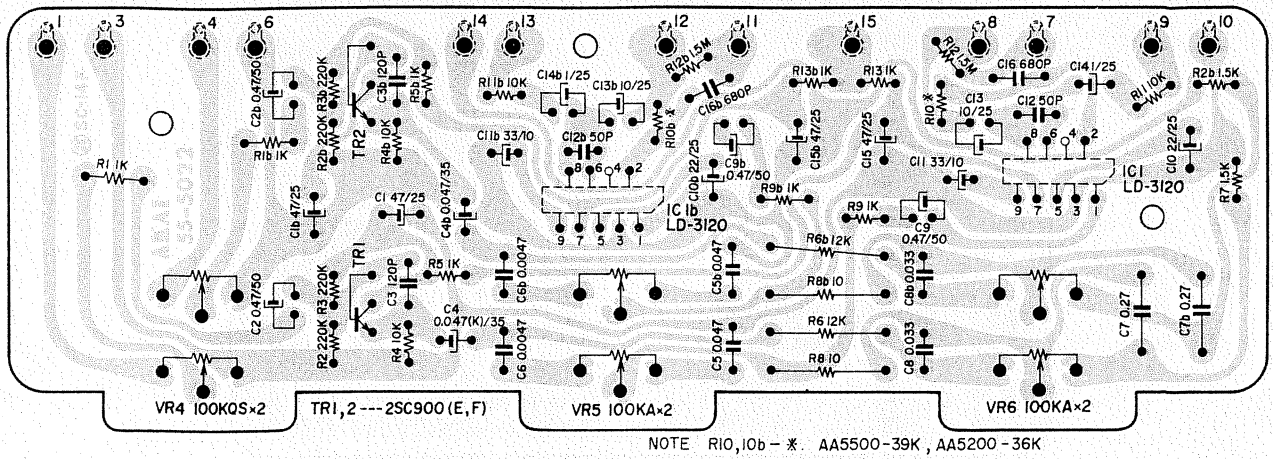
MIC. E-F. AMP. P.C. BOARD (55-5049)



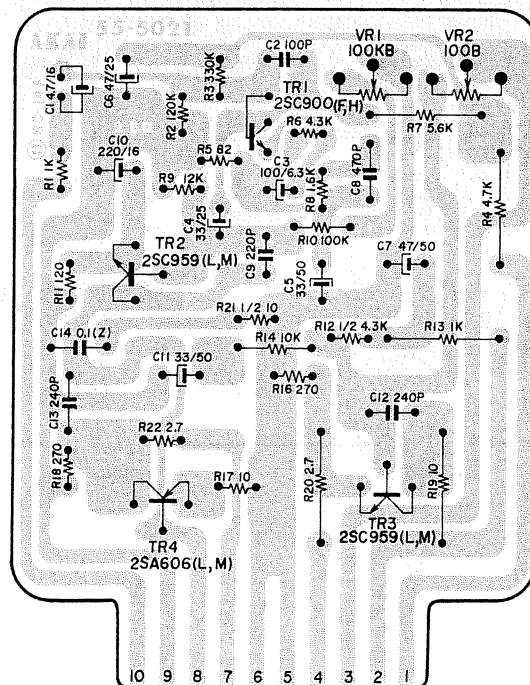
FILTER P.C. BOARD (55-5023)



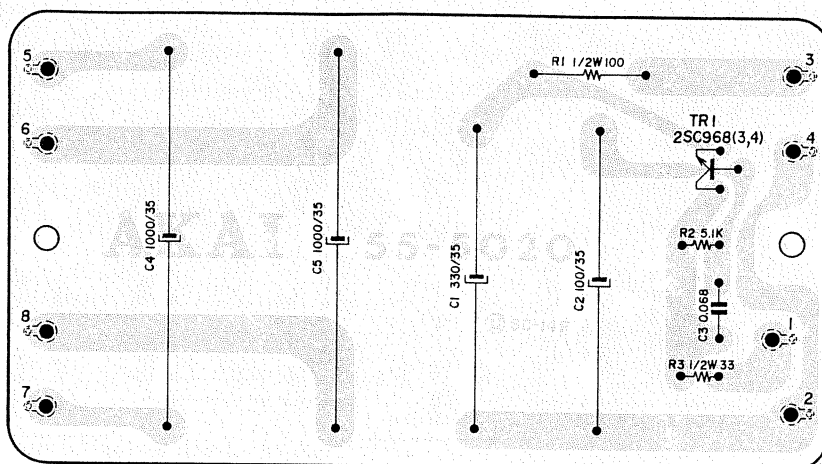
PRE TONE AMP. P.C. BOARD (55-5022)



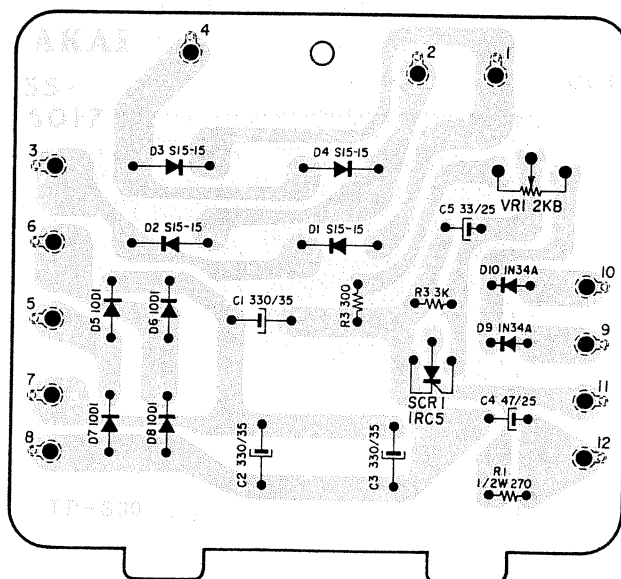
MAIN AMP. P.C. BOARD (55-5021)



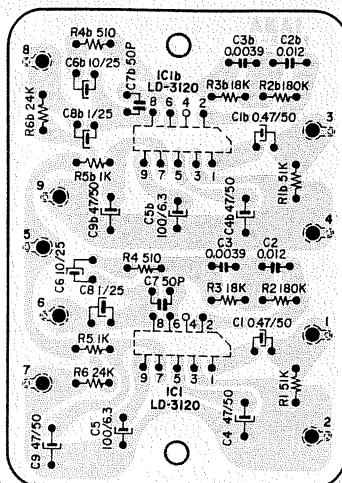
REGULATOR & OPC. P.C. BOARD (55-5020)



POWER SUPPLY P.C. BOARD (55-5017)



EQUALIZER AMP. P.C. BOARD (55-5211)



1 3 4 6 14 3 12 11 15 8 7 9 10

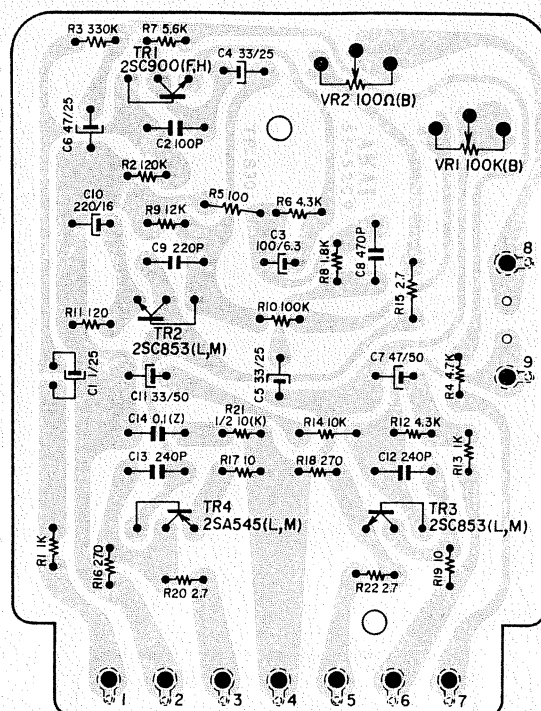
R1 1K C2b 0.47/50 R2b 220K R3b 220K TR2 C3b 10/25 C4b 0.047/35 C1b 47/25 C1 47/25 C2 0.47/50 R2 220K R3 220K TR1 C3 10/25 C4 0.047(K)/35 C5 0.0047 C6b 0.0047 C5b 0.047 C6 0.0047 C7 0.27 C7b 0.27

VR4 100KX5x2 TR1, 2 --- 2SC900 (E, F) VR5 100KAx2 VR6 100KAx2

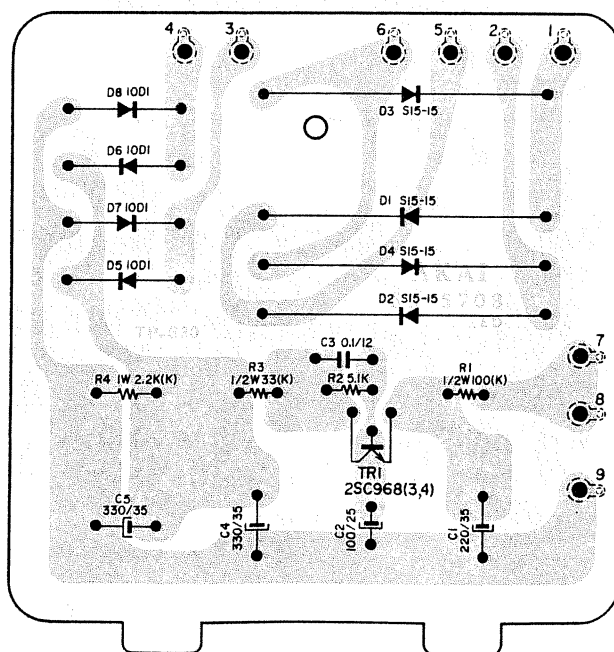
IC1 LD-3120

NOTE RIO, 10b - ✱. AA5500-39K, AA5200-36K

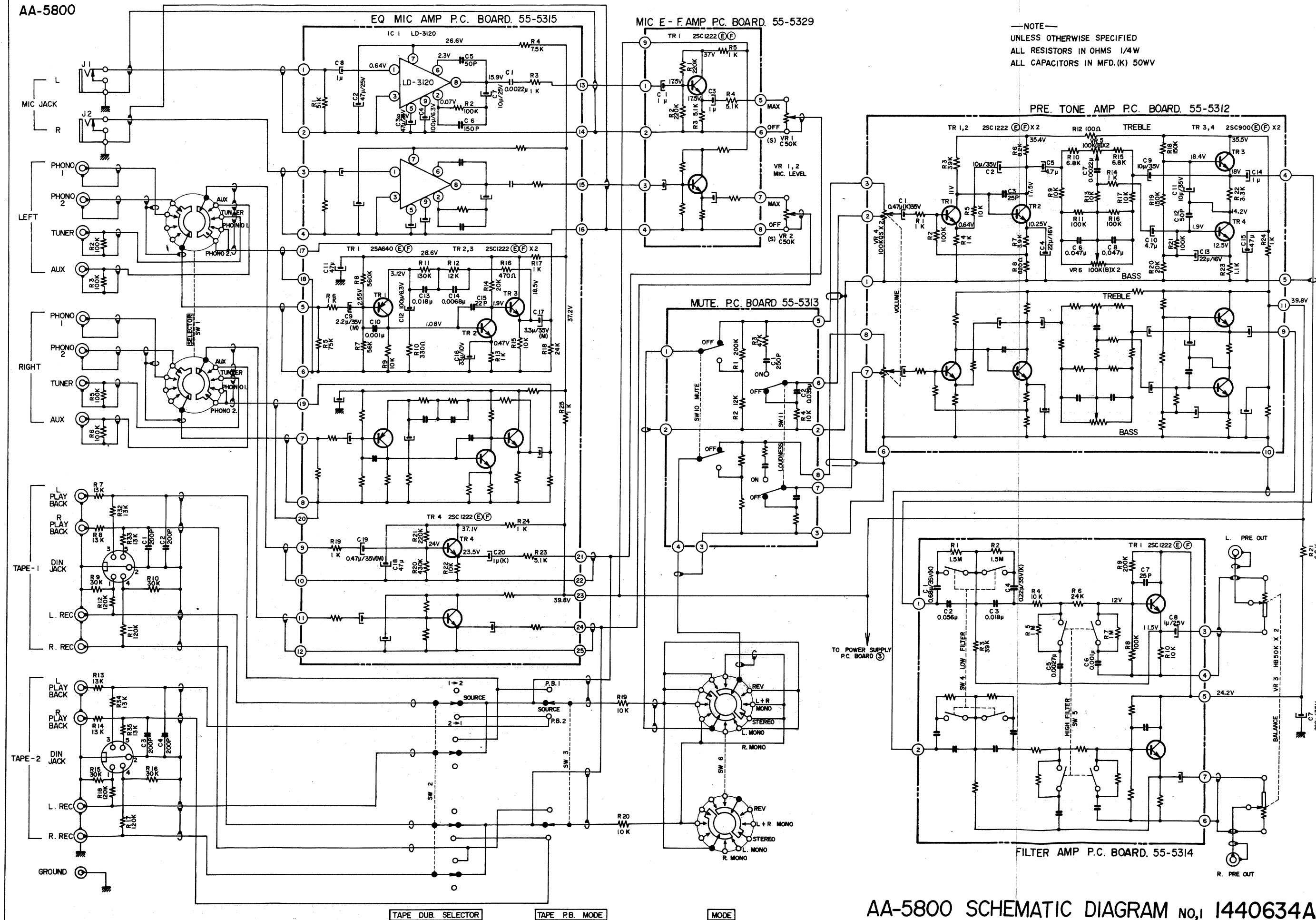
MAIN AMP. P.C. BOARD (55-5209)

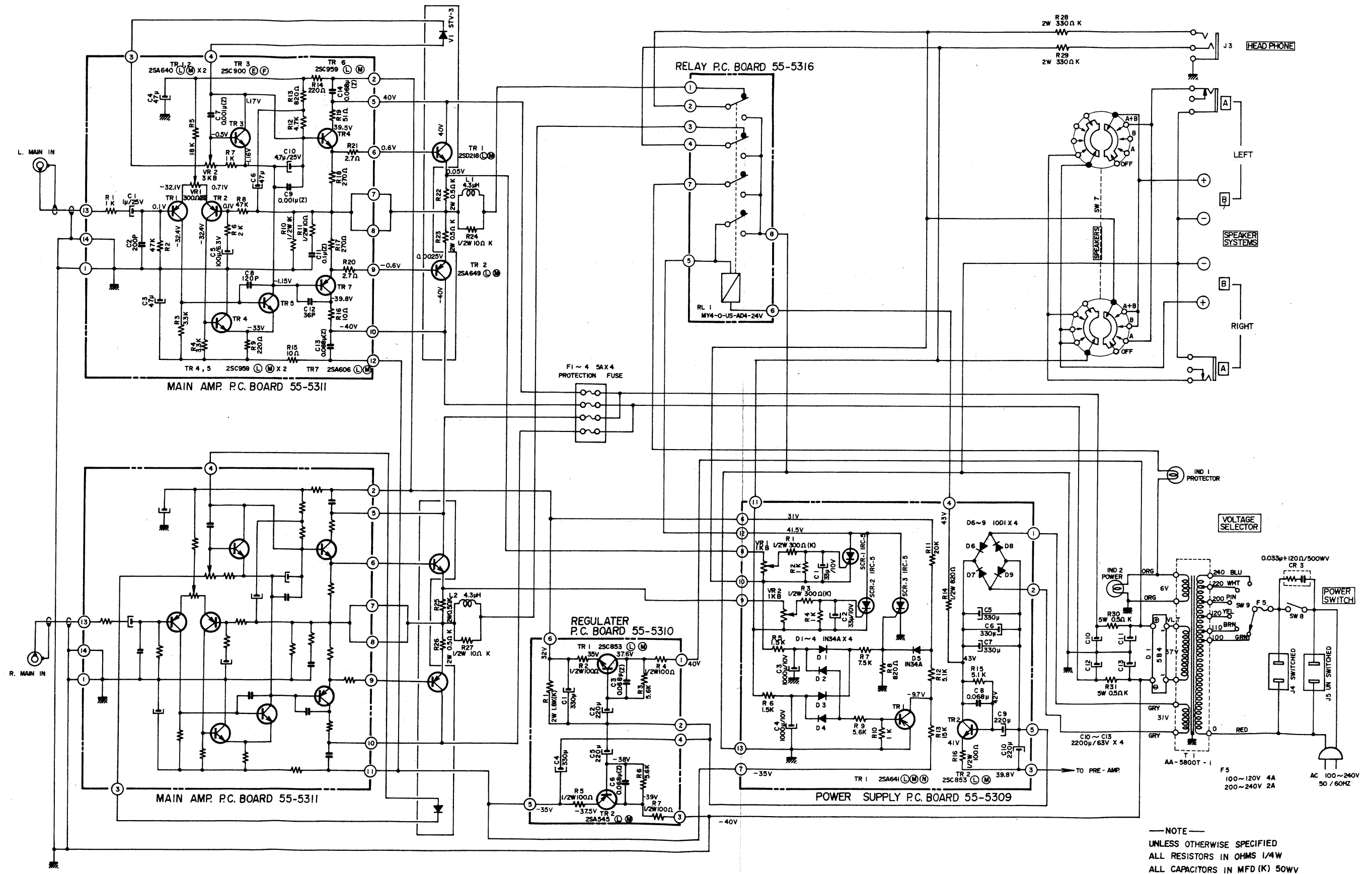


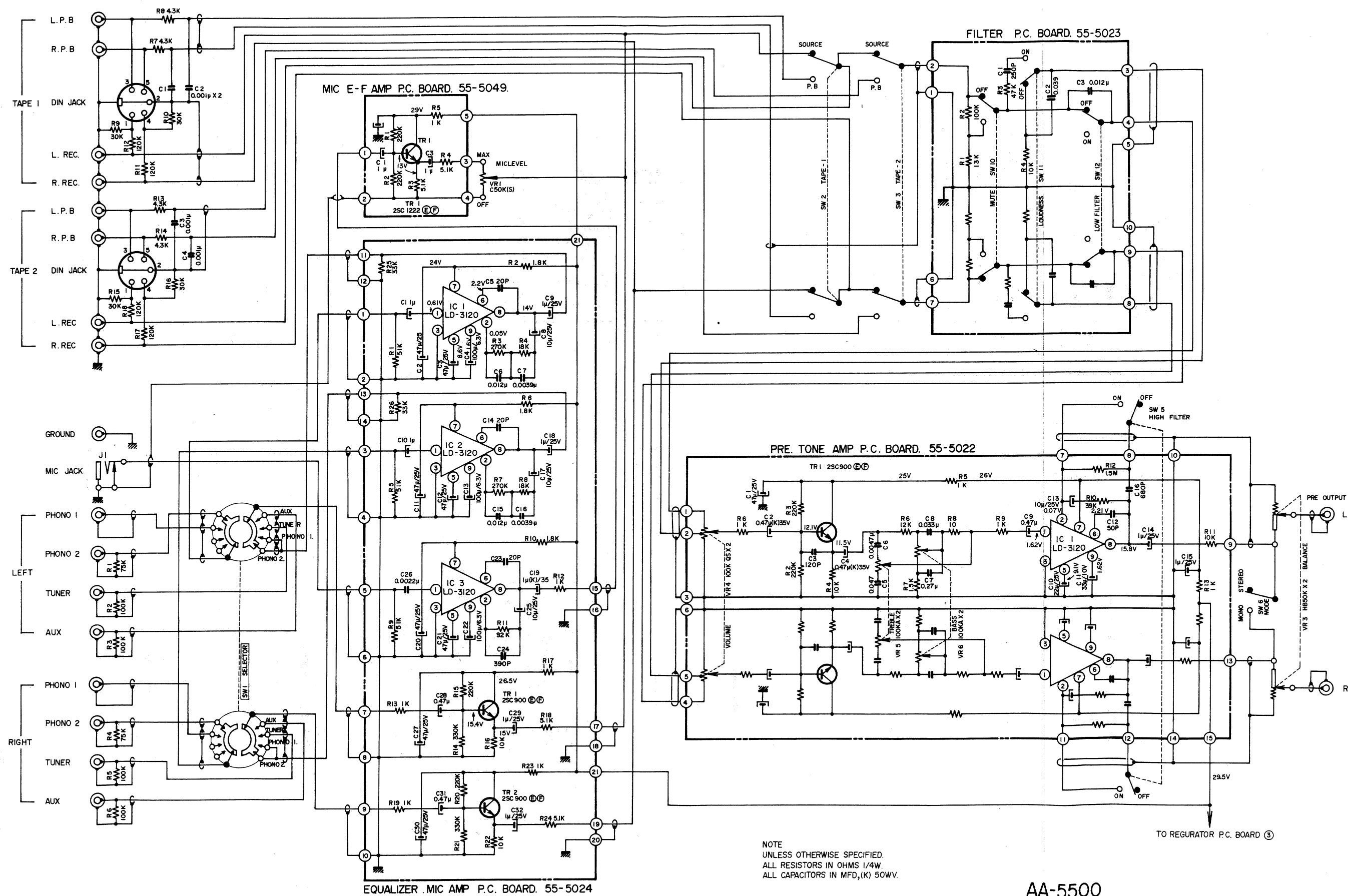
POWER SUPPLY P.C. BOARD (55-5208)

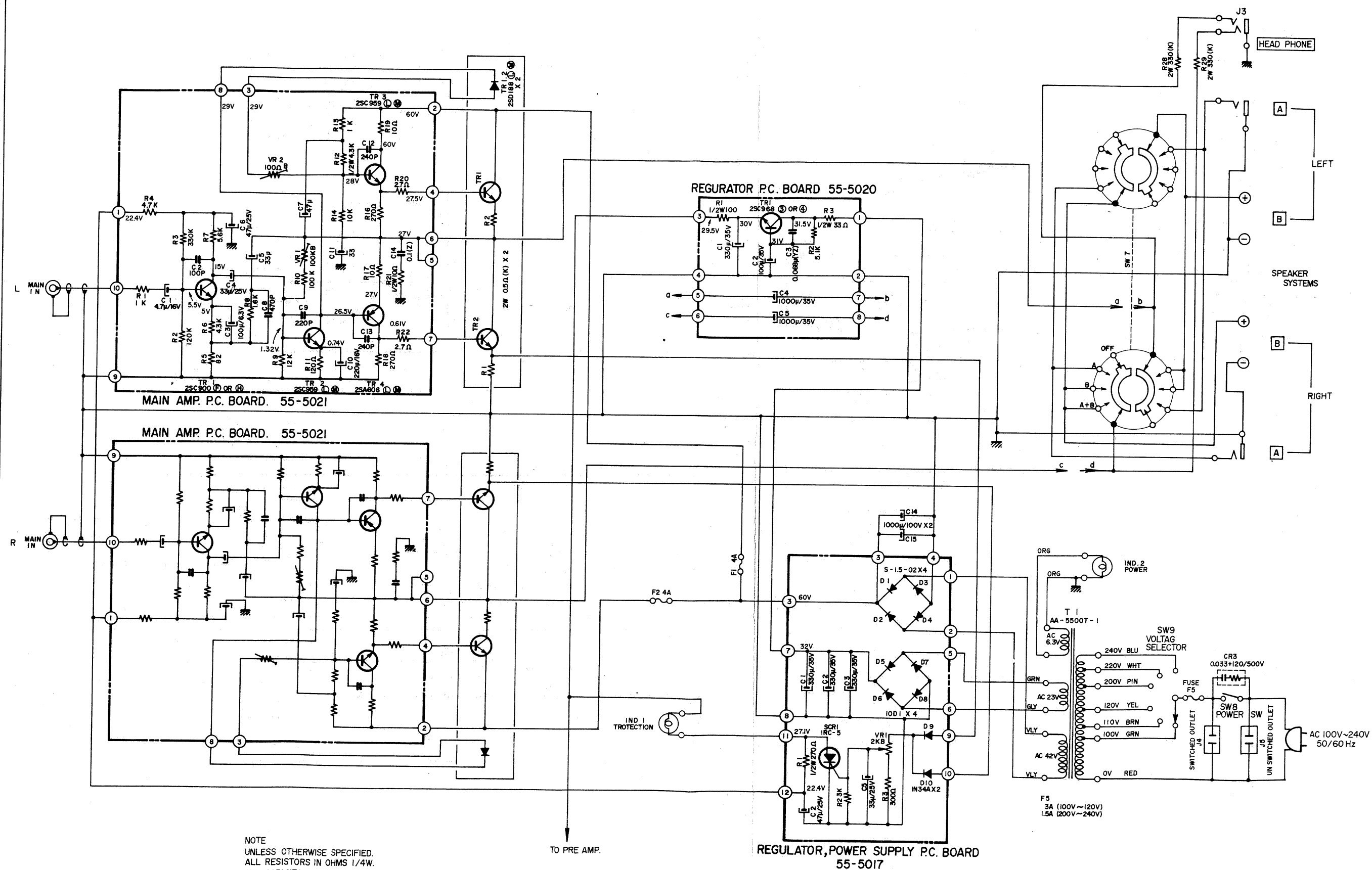


AA-5800









AA-5500
SCHEMATIC DIAGRAM NO.2-2 1440637A
2C

AA-5200 NQ2-1

